

## CASE REPORTS

far more frequently in adult patients as articles such as this appear in the literature. It is essential that family practitioners and internists be able to recognize and treat MCLNS appropriately.

### Summary

This is one of the rare reports in the United States literature of an adult with mucocutaneous lymph node syndrome (Kawasaki disease), an increasingly common pediatric problem. It is anticipated that MCLNS will be reported with increasing frequency in the adult population as family practitioners and internists become more familiar with this syndrome. MCLNS is of significance because of a 1 percent to 3 percent mortality resulting from cardiac complications of coronary artery arteritis, arrhythmias, coronary artery

microaneurysm formation and prolonged morbidity.

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## Rapid Osteolysis in Pancreatic Carcinoma

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THE BONY MANIFESTATIONS of pancreatitis are usually related to ischemia. Circulating lipolytic and proteolytic enzymes may produce endothelial damage and vascular compression, which may occlude vessels with resultant ischemia and infarction.<sup>1-6</sup> When vascular compromise occurs in the shaft of bones, medullary infarcts are produced; when it occurs at the end, aseptic necrosis of

articular surfaces results. We present a case of rare bony manifestations of pancreatic disease related to ischemia, diagnosed as rapid osteolysis in pancreatic carcinoma.

### Report of a Case

A 63-year-old black man, a chronic alcoholic, was admitted to hospital with pain and swelling of four days' duration in his right foot, accompanied by fever and shaking chills. There was no history of trauma or preceding arthritis. His right foot and ankle were swollen and tender and two nodules, 1.5 by 1.5 cm in size, were palpable on the right achilles tendon. Initial laboratory studies gave the following values: hemoglobin 9 grams, leukocyte count 9,600 per cu mm, albumin 2.2 grams per dl, serum aspartate aminotransferase 48 IU (normal less than 50 IU), alkaline phosphatase 500 IU (normal 30 to 85 IU), bilirubin 2.4 mg per dl (1.6 per dl direct), serum amylase 18,350 IU (normal 60 to 300 IU) and serum lipase 20.7 IU (normal 0.7 to 1.0 IU).

The right third metacarpophalangeal joint, initially slightly swollen, became exquisitely tender and erythematous the day after admission. Initial roentgenograms (Figure 1A), aside from soft tissue swelling, showed no abnormalities. A week after admission, however, substantial destruction was noted in the distal end of the third metacarpal and in the fifth midphalanx (Figure 1B). Fluid aspirated from the joint contained no organisms on

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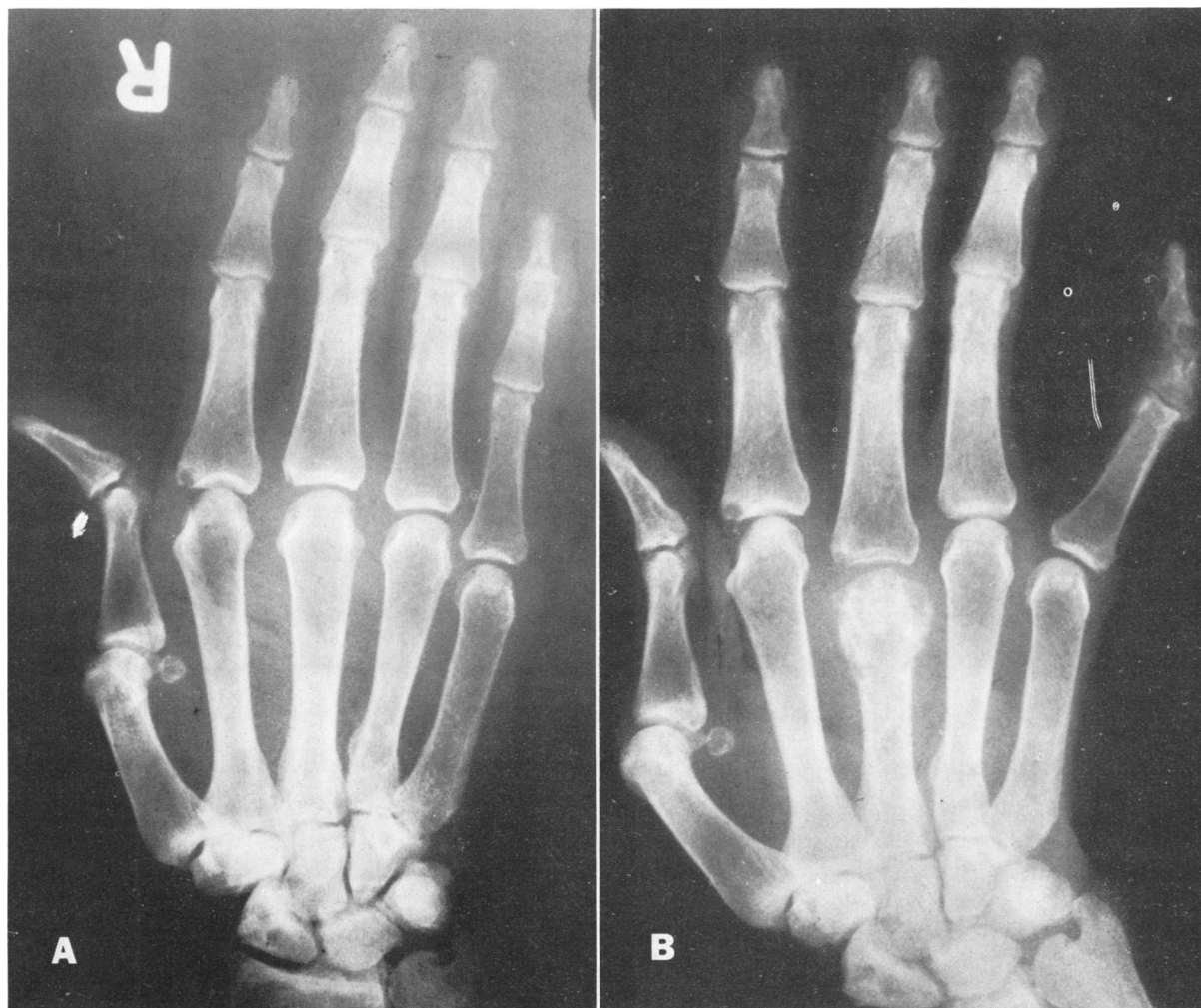
Gram stain and was sterile on culture. Leukocyte count was 17,700 per cu mm (79 percent polymorphonuclear neutrophils), but no crystals were observed.

During the patient's stay in hospital, the right foot became increasingly hot and tender. Initial roentgenograms showed no abnormalities aside from old healed fractures of the second and third right metatarsals (Figure 2A). However, a week following admission, roentgenograms showed substantial lytic destruction of the second through fifth metatarsals (Figure 2B). A biopsy specimen from skin overlying the destructive bone changes showed extensive metastatic fat necrosis. Liver function deteriorated, jaundice deepened and an exploratory laparotomy showed extensive adenocarcinoma of the pancreas. A palliative

cholecystojejunostomy was done. The bilirubin levels gradually fell to near normal and the remainder of the postoperative course was unremarkable. However, the patient's liver function gradually deteriorated and he died four months following operation. An autopsy was carried out, which showed diffuse metastatic carcinoma of the pancreas to liver, lymph nodes and peritoneal surfaces.

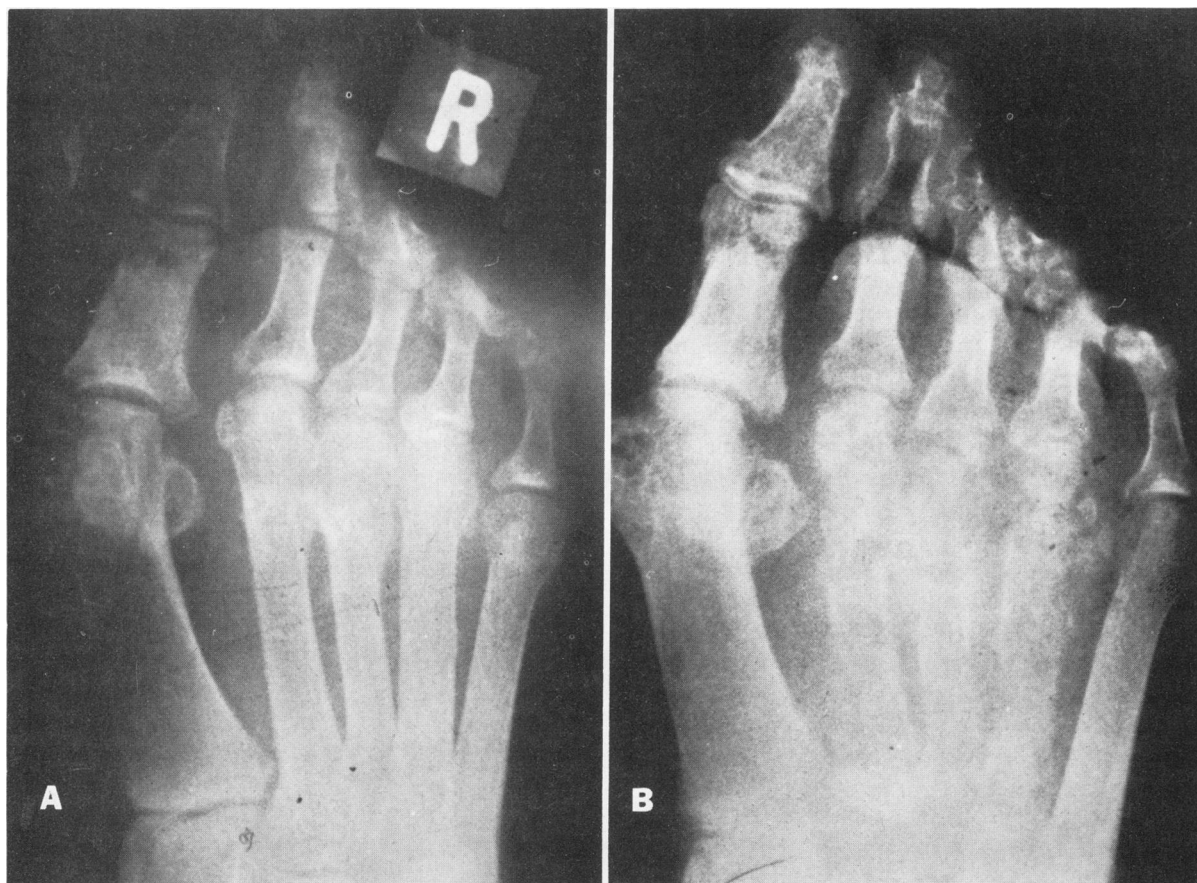
## Discussion

The underlying common denominator of bone changes in pancreatic disease is felt to be ischemia.<sup>1,5</sup> In both acute and chronic pancreatitis, elevated proteolytic enzymes may cause direct endothelial damage.<sup>7</sup> Lipolytic enzymes acting on intramedullary fat produce edema, elevated intra-



**Figure 1.**—**A**, Anteroposterior view of the right hand on admission showing no bony abnormalities. **B**, Anteroposterior view one week later shows destruction of the fifth middle phalanx and the third metacarpal. Note soft tissue swelling.

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**Figure 2.**—**A**, Anteroposterior view of the right foot. There is soft tissue swelling over the metatarsals but no bony changes aside from old healed fractures of second and third right metatarsals on admission. **B**, Follow-up anteroposterior view a week later shows destruction of second through fifth metatarsals.

medullary pressure and mechanical compression on the narrow, tenuous branches of nutrient vessels, furthering the ischemia.<sup>3,8</sup>

Initial roentgenograms may not show abnormalities even with pronounced ischemia. With resorption of necrotic bone, however, lytic areas will appear. After several weeks calcified medullary infarcts and aseptic necrosis of articular surfaces may result.

Rapid osteolysis reflects the result of high levels of circulating pancreatic enzymes.<sup>9</sup> Bone dissolution may occur over a matter of days. Periosteal reaction may occur but is infrequently seen.

Skeletal metastasis is rare in pancreatic carcinoma, but when it occurs, it is usually lytic. Further, the rapid course of osteolysis should allow differentiation from the usually slow progression of metastatic disease.

### Summary

Rapid osteolysis is a rare bony manifestation of pancreatic disease, usually accompanying acute or

chronic pancreatitis. Rapid dissolution of bone occurs most likely as the result of high levels of circulating enzymes on already ischemic tissue and rarely accompanies carcinoma of the pancreas. A case of osteolysis involving the small bones of the hands and feet in a patient with carcinoma of the pancreas is presented.

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